

Claim Amendments

Please amend claims 1-7, 9-17, 19-34 and 36 as follows:

1. (currently amended) A method comprising:

defining in a client in a multimedia streaming network at least one parameter for determining a rate adaptation operating range, wherein the streaming network comprises a server configured for providing streaming data to the client, the client having a receiver buffer for storing at least part of the streaming data to compensate for a difference between data transmission amount by the server and usage amount of the streaming data by the client so as to allow the client to have sufficient amount of streaming data to play out in a non-disruptive manner, and wherein the rate adaption operating range is used for rate adaptation between the server and the client;

providing to the server information indicative of said at least one parameter;

adapting in the server the data amount to a reception rate at the client based on said at least one parameter, ~~wherein said adapting in the server comprises adjusting a sampling rate of the streaming data;~~ and

adjusting in the client packet transfer delay variation based on said adapting, wherein said at least one parameter comprises a shift amount in time indicative of a difference between a sampling time and a transmission time of a packet at the server.

2. (currently amended) ~~The method of~~ A method according to claim 1, wherein said ~~at least one parameter comprises a minimum~~ shift amount ~~indicative of a~~ is substantially equal to said difference ~~between a sampling time and a transmission time of a packet at the server~~ so as to allow the server to carry out said adapting based on the ~~minimum~~ shift amount.

3. (currently amended) ~~The method of~~ A method according to claim 1, wherein said ~~at least one parameter comprises a target shift amount indicative of a~~ shift amount is greater than [[a]] said difference ~~between a sampling time and a transmission time of a packet at the server~~ so as to allow the server to carry out said adapting based on the ~~[[target]]~~ shift amount.

4. (currently amended) ~~The method of~~ A method according to claim 1, wherein said at least one parameter further comprises a number specifying a maximum difference between the number of bytes that has been sent and the number of bytes that have been sampled so as to allow the server to carry out said adapting based on the number.

5. (currently amended) ~~The method of~~ A method according to claim 1, further comprising adapting a sampling rate to the transmission rate in the server based on said at least one parameter.

6. (currently amended) ~~The method of claim 1~~ A method comprising:

defining in a client in a multimedia streaming network at least one parameter for determining a rate adaptation operating range, wherein the streaming network comprises a server configured for providing streaming data to the client, the client having a receiver buffer for storing at least part of the streaming data to compensate for a difference between data transmission amount by the server and usage amount of the streaming data by the client so as to allow the client to have sufficient amount of streaming data to play out in a non-disruptive manner, and wherein the rate adaption operating range is used for rate adaptation between the server and the client;

providing to the server information indicative of said at least one parameter;

adapting in the server the data amount to a reception rate at the client based on said at least one parameter; and

adjusting in the client packet transfer delay variation based on said adapting, wherein said at least one parameter comprises a [[clock]] shift amount in time indicative of a clock drift between the server and the client for preventing playout disruption in the client.

7. (currently amended) ~~The method of~~ A method according to claim [[1]] 6, wherein said adapting comprises an adjustment of a transmission rate.

8. (canceled)

9. (currently amended) ~~The method of~~ A method according to claim 1, wherein said adapting comprises an adjustment of both a transmission rate and ~~[[the]]~~ a sampling rate.

10. (currently amended) ~~The method of~~ A method according to claim 1, wherein said at least one parameter further comprises:

~~a minimum shift amount indicative of a difference between a sampling time and a transmission time of a packet at the server;~~

~~a target shift amount indicative of a shift amount greater than a difference between a sampling time and a transmission time of a packet at the server;~~

a number specifying a maximum difference between the number of bytes that has been sent and the number of bytes that have been sampled; and

~~a clock shift amount, and wherein two or more of the minimum shift amount, the target shift amount, the specifying number and the clock are sent together to~~ indicative of a clock drift between the client and the server.

11. (currently amended) A multimedia streaming network comprising:

at least a client; and

a server for providing streaming data to the client, the client having a receiver buffer to compensate for a difference between data transmission amount by the server and data usage amount by the client so as to allow the client to have sufficient amount of streaming data to play-out in a non-disruptive manner, wherein the client comprises:

a mechanism for defining at least one parameter for determining a rate adaptation operating range, and for providing information indicative of said at least one parameter to the server so as to allow the server to adapt the data amount to a reception rate at the client based on said at least one parameter, ~~wherein the data amount is adapted by adjusting a sampling rate of the streaming data in the server;~~ and

a mechanism to adjust a packet transfer delay variation based on said adapting, wherein said at least one parameter comprises a shift amount in time indicative of a difference between a sampling time and a transmission time of a packet at the server.

12. (currently amended) [[The]] A multimedia streaming network [[of]] according to claim 11, wherein said ~~at least one parameter comprises a minimum~~ shift amount ~~indicative of a~~ is equal to said difference between a sampling time and a transmission time of a packet at the server so as to allow at the server to carry out said adapting based on said shift amount.

13. (currently amended) [[The]] A multimedia streaming network [[of]] according to claim 11, wherein said ~~at least one parameter comprises a target~~ shift amount ~~indicative of a shift amount~~ is greater than [[a]] said difference between a sampling time and a transmission time of a packet at the server so as to allow the server to carry out said adapting.

14. (currently amended) [[The]] A multimedia streaming network [[of]] according to claim 11, wherein said at least one parameter further comprises a number specifying a maximum difference between the number of bytes that has been sent and the number of bytes that have been sampled so as to allow the server to carry out said adapting.

15. (currently amended) [[The]] A multimedia streaming network [[of]] according to claim 11, wherein the server comprises an adapting mechanism for adapting [[the]] a sampling rate to the transmission rate based on said at least one parameter.

16. (currently amended) [[The]] A multimedia streaming network [[of]] according to claim 11, wherein said at least one parameter further comprises a [[clock]] further shift amount ~~for preventing playout disruption in~~ indicative of a clock drift between the server and the client.

17. (currently amended) [[The]] A multimedia streaming network [[of]] according to claim 11, wherein the server comprises an adapting mechanism for adjusting a transmission rate.

18. (canceled)

19. (currently amended) [[The]] A multimedia streaming network [[of]] according to claim 11, wherein the server comprises an adapting mechanism for adjusting both a transmission rate and [[the]] a sampling rate.

20. (currently amended) ~~[[The]]~~ A multimedia streaming network ~~[[of]]~~ according to claim 11, wherein the server comprises a software program having at least a programming code for carrying out said adapting.

21. (previously presented) A computer readable medium embedded with a software program comprising:

programming code for defining in a client in a multimedia network at least one parameter for determining a rate adaptation operation range, wherein the streaming network comprises a server configured for providing streaming data to the client, the client having a receiver buffer for storing at least part of the streaming data to compensate for a difference between data transmission amount by the server and usage amount of the streaming data by the client so as to allow the client to have sufficient amount of streaming data to play out in a non-disruptive manner, where information indicative to said at least one parameter is provided to the server so as to allow the server to carry out rate adaptation between the server and the client based on said at least one parameter, wherein said one parameter comprises a shift amount in time indicative of a difference between a sampling time and a transmission of a packet at the server ~~the rate adaptation comprises adjusting in the server a sampling rate of the streaming data;~~ and

programming code for adjusting a packet transfer delay variation in the client for the rate adaptation.

22. (currently amended) ~~[[The]]~~ A computer readable medium ~~[[of]]~~ according to claim 21, wherein said ~~at least one parameter comprises a minimum~~ shift amount indicative of a is substantially equal to said difference between a sampling time and a transmission time of a packet at the server so as to allow at the server to carry out said rate adaptation.

23. (currently amended) ~~[[The]]~~ A computer readable medium ~~[[of]]~~ according to claim 21, wherein said ~~at least one parameter comprises a target shift amount indicative of a shift amount~~ is greater than [[a]] said difference between a sampling time and a transmission time of a packet at the server so as to allow the server to carry out said rate adaptation.

24. (currently amended) ~~[[The]]~~ A computer readable medium ~~[[of]]~~ according to claim 21, wherein said at least one parameter further comprises a number specifying a maximum difference between the number of bytes that have been sent and the number of bytes that have been sampled so as to allow the server to carry out said rate adaptation.

25. (currently amended) ~~[[The]]~~ A computer readable medium ~~[[of]]~~ according to claim 21, wherein said at least one parameter further comprises a ~~[[clock]]~~ further shift amount ~~for preventing playout disruption in~~ indicative of a clock drift between the server and the client.

26. (currently amended) An apparatus comprising:

a buffer for storing at least part of streaming data provided by a server in a multimedia streaming network to compensate for a difference between data transmission amount by the server and the data usage amount in a client so that sufficient amount of the streaming data can be played out in a non-disruptive manner;

a mechanism for defining at least one parameter that determines a rate adaptation operating range in the server so as to allow the server to adapt the data transmission amount to a reception rate at the client based on said at least one parameter, wherein said one parameter comprises a shift amount in time indicative of a difference between a sampling time and a transmission time of a packet at the server ~~the data amount is adapted by adjusting in the server a sampling rate of the streaming data;~~ and

a mechanism for adjusting a packet transfer delay variation based on said adapting.

27. (currently amended) ~~[[The]]~~ An apparatus ~~[[of]]~~ according to claim 26, wherein said defining mechanism comprises a software program having at least a programming code for defining said at least one parameter.

28. (currently amended) ~~[[The]]~~ An apparatus ~~[[of]]~~ according to claim 26, wherein said adjusting mechanism comprises a software program having at least a code for adjusting the packet transfer delay variation.

29. (currently amended) ~~[[The]]~~ An apparatus ~~[[of]]~~ according to claim 26, wherein said ~~at least one parameter comprises a minimum~~ shift amount ~~indicative of a~~ is substantially equal to said difference ~~between a sampling time and a transmission time of a packet at the server~~ so as to allow the server to carry out said adapting based on the ~~minimum~~ shift amount.

30. (currently amended) ~~[[The]]~~ An apparatus ~~[[of]]~~ according to claim 26, wherein said ~~at least one parameter comprises a target~~ shift amount ~~indicative of a shift amount~~ is greater than ~~[[a]]~~ said difference ~~between a sampling time and a transmission time of a packet at the server~~ so as to allow the server to carry out said adapting based on the ~~[[target]]~~ shift amount.

31. (currently amended) ~~[[The]]~~ An apparatus ~~[[of]]~~ according to claim 26, wherein said at least one parameter further comprises a number specifying a maximum difference between the number of bytes that have been sent and the number of bytes that have been sampled so as to allow the server to carry out said adapting based on the number.

32. (currently amended) A network element in the multimedia streaming network, said network element comprising:

a receiving module for receiving a request from a client have a buffer for storing at least part of streaming data provided by the network element to compensate for a difference between data transmission amount by the network element and data usage amount by the client so that the client has sufficient amount of streaming data to play out in a non-disruptive manner, the request indicative of at least one parameter that determines a rate adaptation operating range in the network element, wherein said one parameter comprises a shift amount in time indicative of a clock drift between the network element and the client; and

a mechanism for adapting, based on said at least one parameter, the data transmission amount from the network element to a reception rate at the client, ~~wherein the adapting comprises adjusting in the network element a sampling rate of the streaming data,~~ so as to allow the client to adjust a packet transfer delay variation based on said adapting.

33. (currently amended) [[The]] A network element [[of]] according to claim 32, wherein said adapting mechanism comprises a software program having at least a programming code for adapting the data transmission amount.

34. (currently amended) [[The]] A network element [[of]] according to claim 33, wherein the software program comprises a programming code for adjusting the transmission rate.

35. (canceled)

36. (currently amended) [[The]] A network element [[of]] according to claim 33, wherein the software program comprises a programming code for adjusting of both a transmission rate and [[the]] a sampling rate.